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IM - COMMENTARY

Why and how do we measure frailty?

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In the present issue of *Internal and Emergency Medicine*, Gullón et al. [1] report the results of an interesting observational study aimed at evaluating the prescription patterns of anticoagulants in a sample of older persons with non-valvular atrial fibrillation. In particular, the authors are interested in exploring the influence that the frailty condition (defined using the FRAIL scale [2]) may have on the therapeutic choices. The study confirms that frailty is highly prevalent in the hospital setting, and clearly represents a risk condition for negative health-related outcomes (in particular, in-hospital and 1-year mortality). Nevertheless, it seems that frailty does not represent a predictor of anticoagulant prescription, whereas functional impairment (captured by the Barthel Index) does.

The article raises important points worth a discussion. The presentresults are consistent with a large body of evidence documenting the association of frailty with negative health-related outcomes [3]. It is well established that the frail individuals are more likely to experience functional loss, be hospitalized/institutionalized, and (as in this report) die. Thus, not surprisingly, participants here identified as "frail" are indeed more likely to show typical signs of a negative phenotype (i.e., older age, higher number of comorbidities, physical or cognitive impairments) compared to the non-frail individuals. On the basis of this evidence, it is unclear why frail and non-frail participants do not differ in terms of anticoagulant prescription. Different prescribing patterns could have been expected between the two groups. This negative finding may be even more puzzling when considering that physical dysfunction is associated with a lower use of anticoagulants. The resulting apparent contradiction may challenge the clinical relevance of the frailty construct. In fact, it might be argued that the presence of frailty is not yet the part of the clinical decision algorithm leading to the choice of prescribing of a certain drug. In other words, the findings may suggest that the need for assessing the frailty could easily be questioned.

The solution of such enigma may reside in the vision we have for frailty (and its assessment). If frailty represents a mere prognostic factor for capturing the risk of developing a negative outcome, its utility might be quite useless. The literature is full of other constructs (and related risk assessment instruments) which are able to replicate these findings. A measure of physical function (as the Barthel Index), or even the CHA2DS2-VASc or the HAS-BLED scores used in this study is probably able to predict mortality in older persons as well. The prediction of a negative outcome is relatively easy, and is based on the discrimination between what is "good" from what is "bad". Every dichotomous variable working under this scenario might successfully serve for the purpose.

However, frailty was not designed to "simply predict". Its construct is based on the assumption that the traditional medical approach is insufficient to address the multiple, heterogeneous, and complex needs of older persons [4]. The identification of frailty (as global marker of risk) makes sense only if contextualized into an ad hoc public health framework [5]. The positive result of a frailty screening should lend support to the need for a comprehensive geriatric assessment, and the introduction of the patient into an adapted model of care [6, 7]. Only in this way, the disease-centered paradigms of traditional medicine will be abandoned in favor of a person-centered approach. If the analysis of the causes/contributors underlying the frailty status is absent and the detection of frailty is not targeted to the design of a person-tailored intervention, the stability of the entire construct may collapse. Frailty becomes the sterile result of a (more or less arbitrarily designed) tool with limited generalizability of the findings and unclear clinical relevance. In this context, it is also noteworthy that the formal agreement of the many validated frailty instruments available in the literature is relatively modest [8]. In other

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words, according to the tool I will choose to use, I could obtain different results. Such a not negligible aspect (especially in a field where a gold standard instrument is currently missing) implies a careful and a priori consideration of the aims/objectives requesting the frailty detection.

In this study, the authors adopted an instrument (i.e., the FRAIL scale), which was originally designed for disseminating geriatric knowledge in other specialties (in particular, primary care) [2, 9, 10]. Interestingly, Gullón and colleagues found that more than 90% of their sample presented one or more signs of frailty, that is, could be defined as pre–frail (see below) or frail [1]. This result suggests that the FRAIL scale might easily get to saturation and present a sort of "ceiling effect". If most of the persons evaluated by a test are positive, the instrument might lose its value and potentially become meaningless. Was the FRAIL scale the best tool to be adopted in this setting where the majority of individuals are very frail? Are there other instruments potentially allowing a better stratification of the risk profile in the population of interest and be more responsive to the needs of the overall framework? The choice of the frailty assessment tool should not be limited to "one of the many validated tools", but actively directed towards the "validated tool that more than others informs the future decisions to take".

A further explanation to the lack of significant results can also be found in the way the FRAIL scale results have been used. The FRAIL scale is designed to distinguish three levels of severity: robustness, pre–frailty, and frailty. Since the population was very frail (I would say by definition since the study is conducted in a hospitalized sample of very old individuals [11]), it was chosen to merge the robust and pre–frail participants into one "non-frail" group. As soon as such hybrid group was generated and used as reference for the subsequent analyzes, a possible bias was introduced: what is here considered as "normal" (i.e., non-frail) was indeed not. The largest part of those participants composing the non-frail group (i.e., 42%) was presenting one or two signs of frailty. Raising the threshold of acceptable risk in the control group might have reduced/watered the differences between the non-frail and frail participants, leading to possible false-negative findings.

This issue leads to a more general and theoretical question: what does it mean being pre–frail? Is it good or not? Again, this depends on a priori decision about the use I will make of the test results. If pre–frailty represents an intermediate condition paving the way for a specific intervention (different from those dedicated to robust and frail individuals), it may surely exist and be accepted. Differently, if it remains a vague entity in the middle and is moved to the right or left side of the frailty distribution per mere convenience, that might represent a problem. In fact, despite its diffused use in the literature, this methodological artifice may challenge the interpretation of the findings and limit the comparability across studies.

In conclusion, the authors should be congratulated for exploring the important aspect of the anticoagulant prescription in hospitalized older persons with atrial fibrillation. Their work solicits more attention among clinicians and researchers about the frailty concept and its operationalization. The study also confirms the high prevalence of frailty in the hospital setting [11]. This issue should foster a debate about the role that geriatric medicine and geriatricians may have in the development of novel models of care with the final aim of better tailored priorities/needs of our aging population.

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

Statement of human and animal rights The article does not contain any study on human participants or animals.

Informed consent Informed consent was not required.

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